

Guidance on public health actions to be taken on notification of Avian Influenza (AI) in poultry and wild birds in Ireland

Updated in 2017 (as part of H5N8 AI Incident Review Group 2016/17) from the original Supplement 11 Part 1 guidance developed by the avian influenza subcommittee of the Pandemic Influenza Expert Group 2012

September 2017

This guidance is subject to change due to the evolving situation regarding avian influenza. Please see [Avian Influenza section of HPSC website](#) and [Department of Agriculture, Food and the Marine \(DAFM\)](#) for the latest information and guidance.

Contents

List of table and figures.....	3
Abbreviations.....	4
H5N8 Incident Review Group Members	5
1. Introduction	6
2. Background	6
3. Animal health actions	6
3.1 Actions if Avian Influenza is suspected	6
3.2 Actions if Avian Influenza is confirmed.....	7
3.2.1 Actions if LPAI is confirmed.....	7
3.2.2 Actions if HPAI is confirmed.....	8
4. Human health actions	12
4.1 Management of persons exposed during an incident of Avian Influenza (AI)	14
4.1.1 Risk assessment factors	14
4.1.2 Specific actions for those with potential occupational exposure	15
4.1.3 Specific actions for HPSC.....	15
4.1.4 Laboratory testing sequence	16
4.1.5 Establishing an OCT.....	16
4.1.6 Escalation of response	17
4.2 The strict and standard approaches	19
4.2.1 Principles of the strict approach	19
4.2.2 Circumstances where a strict approach should be used	19
4.2.3 Principles of the standard approach.....	19
4.2.4 Exposure to unidentified disease in birds.....	20
4.3 Exposure categories during an avian influenza incident	22
4.4 Health surveillance of exposed individuals.....	22
4.4.1 Strict approach.....	22
4.4.2 Standard approach.....	24
4.5 Antiviral chemoprophylaxis	24
4.5.1 Incidents in poultry	24
4.5.2 Strict approach (categories A- C)	25
4.5.3 Standard approach (all categories).....	25
4.6 Communications	27
4.7 Management of symptomatic individuals	27
4.8 Public Health management of contacts of human cases of AI	27
4.9 Update plan for this guidance document	28

List of table and figures

[Table 1: Summary of key management actions in response to Avian Influenza incident according to exposure category](#)

[Table 2: Contact telephone numbers of key agencies](#)

[Figure 1: Escalation of response during AI outbreak animal or human \(revised Appendix 1 from Supplement 11 Part 1\)](#)

[Figure 2: Algorithm to decide strict or standard approach to AI incident \(suspicious or confirmed\)](#)

[Figure 3: Summary of Public Health actions and antiviral prescribing \(revised Appendix 9 from Supplement 11 Part 1\)](#)

Abbreviations

AI	Avian Influenza
AND	Assistant National Director (HSE)
CVRL	Central Veterinary Research Laboratory
DAFM	Department of Agriculture, Food and the Marine
DOH	Department of Health
EU	European Union
H	Haemagglutinin
HSE	Health Service Executive
LDCC	Local Disease Control Centre
LPAI	Low Pathogenicity Avian Influenza
HPAI	Highly Pathogenicity Avian Influenza
HPSC	Health Protection Surveillance Centre
MOH	Medical Officer of Health
N	Neuraminidase
NDCC	National Disease Control Centre
NPHET	National Public Health Emergency Team
NPHORT	National Public Health Outbreak Response Team
NVRL	National Virus Reference Laboratory
OCT	Outbreak Control Team
OIE	World Organisation for Animal Health
PH	Public Health
PHE	Public Health England
PPE	Personal Protective Equipment
RSSVI	Regional Senior Superintending Veterinary Inspector
RZ	Restriction Zone
SI	Statutory Instrument

H5N8 Incident Review Group Members

Aine McNamara	Specialist Public Health Medicine	Department of Public Health, HSE West
Cillian DeGascun	Director National Virus Reference Laboratory	National Virus Reference Laboratory (NVRL)
Colette Bonner	Deputy Chief Medical Officer	Department of Health (DoH)
Denise Long	Emergency Planning	HSE National Office for Emergency Management
Fiona Cloak	Surveillance Assistant	HPSC
Jeff Connell	Chief Laboratory Scientist	NVRL
Katerina Chaintarli	EPIET Fellowship Trainee	HPSC
Kevin Kelleher	Assistant National Director Health Protection	HSE Health & Wellbeing Office
Margaret O'Sullivan	Specialist Public Health Medicine	Department of Public Health, HSE South
Mary McMahon	Occupational Health Physician	DAFM
Mary O'Riordan (Chair)	Specialist Public Health Medicine	HPSC
Michael Smith	Assistant Principal	DoH
Peter Finnegan	Specialist Public Health Medicine	Department of Public Health, HSE North East
Sally Gaynor	Senior Superintending Veterinary Inspector	DAFM
Sarah Jackson	Surveillance Scientist	HPSC
Tom McGuinness	Assistant National Director Emergency Planning	HSE National Office for Emergency Management

1. Introduction

The purpose of this guidance document is to outline the Public Health actions in the event of Avian Influenza (AI) being notified in poultry or wild birds in Ireland. If AI is suspected, both veterinary and public health action will be required, and this may likely be in advance of knowing full details of the subtype of influenza involved. The veterinary actions, laid down in EU Directives, detail the control measures necessary from an animal health perspective.

Whilst the Department of Agriculture, Food and the Marine (DAFM) leads on the management of avian influenza incidents and outbreaks in poultry and wild birds, Public Health – Health Service Executive, under Medical Officer of Health legislation¹, is responsible for leading the local public health response to these incidents, working in close collaboration with DAFM. The guidance builds on standard principles of outbreak management and incorporates lessons learned during previous AI incidents in the Ireland.

2. Background

AI is a disease of animals caused by influenza A viruses. Influenza A viruses are classified according to the types of haemagglutinin (H1 to H18) and neuraminidase (N1 to N11) proteins on their surface. Influenza A viruses also cause influenza in humans and other mammals.

AI viruses are categorised as being Highly Pathogenic Avian Influenza (HPAI) or Low Pathogenicity Avian Influenza (LPAI) depending on their virulence in poultry. These terms do not reflect the seriousness of disease caused in humans; not all HPAI viruses infect humans, and LPAI viruses can cause severe illness in humans.

AI is considered notifiable to the World Organisation for Animal Health (OIE) when:

- the subtype is either H5 or H7 (even if LPAI) or
- any influenza A virus is causing HPAI (which includes subtypes other than H5 and H7)

3. Animal health actions

Control measures for avian influenza in poultry (including captive birds) are laid down in EU legislation in Council Directive 2005/94. Additional measures are laid down in the event that the H5N1 subtype is confirmed in poultry (Commission Decision 2006/415) and if the H5N1 subtype is confirmed in wild birds (Commission Decision 2006/563).

3.1 Actions if Avian Influenza is suspected

Under Council Directive 2005/94, if there is a suspected outbreak of avian influenza in poultry flocks, the following measures apply:

¹ Medical Officer of Health as per S.I. No. 865/2004 - Infectious Diseases (Amendment) Regulations 2004 which states that “medical officer of health” means an appropriately qualified registered medical practitioner who is an employee of the Health Service Executive and is designated in writing by the Health Service Executive to perform the functions of the Chief Medical Officer and the Medical Officer of Health under the Health Acts 1947-1953. The Board of the HSE decided on 7/7/2005 that the appropriate qualification is Specialist Registration in Public Health Medicine.

- The owner or keeper of the birds must not move any animal, animal product or thing off the premises that could spread disease - pending the arrival of a Department Veterinary Inspector to carry out an investigation
- The Veterinary Inspector will serve a restriction notice on arrival at the premises placing controls on the movement of poultry, other captive birds, people, animals, eggs, vehicles and other things liable to spread disease to or from the premises
- Poultry and captive birds on site must be housed or otherwise isolated from other poultry (on other sites) and wild birds
- Disinfection facilities must be installed at entrances and exits of the premises and bird housing
- Depending on the level of suspicion and risk, a Temporary Control Zone may be declared, in which movements restrictions on poultry, other captive birds, eggs and vehicles used by the poultry sector apply (there is no pre-defined radius of a Temporary Control Zone, but it is likely to be 3 km)
- Restrictions on a suspect premises and any Temporary Control Zone declared will be revoked if disease is not confirmed
- DAFM will notify Public Health of a case of AI which is highly suspicious

These control measures focus on animal health issues and aim to prevent any further spread of the disease among animals. Pending confirmation of the outbreak, if deemed necessary, all the poultry in the holding may be culled and destroyed.

3.2 Actions if Avian Influenza is confirmed

DAFM will notify Public Health of a case of AI which is confirmed. Different measures apply, depending on whether LPAI or HPAI are confirmed.

3.2.1 Actions if LPAI is confirmed

Under Council Directive 2005/94, if LPAI is confirmed in poultry, the following measures will be taken:

Measures on the infected premises

- All infected poultry and captive birds will be depopulated either by slaughter in an abattoir or by killing on the farm (limited derogations are possible for certain types of holding – these would be decided on a case-by-case basis)
- The carcasses of the birds and eggs will be destroyed
- An investigation will be carried out by the veterinary inspector (to identify the possible source of infection and all contact premises)
- The premises must be cleaned and disinfected
- The premises may not be re-stocked for 21 days after the cleaning and disinfection has been completed

Measures within the LPAI Restriction Zone (LPAI RZ):

- A census of all premises containing commercial poultry or captive birds will be carried out
- All commercial poultry flocks will be examined by a veterinary inspector and samples taken for avian influenza testing

- Movements of poultry, other captive birds, other animals from poultry farms, eggs and poultry litter/manure are prohibited (except under certain conditions and under licence)
- Bird gatherings are banned
- The release of game birds is banned
- Biosecurity measures must be implemented in the case of people and vehicles moving to and from premises containing poultry or captive birds.

The LPAI RZ will normally be within a radius of 1 km from the infected premises. Check points to control movements of vehicles transporting poultry or poultry-related products into/out of the Zones may or may not be put in place, depending on the particular circumstances.

The **LPAI RZ will remain in place for at least 21 days** after the preliminary cleaning and disinfection of the infected premises has been completed. In the event that the infected flock is not slaughtered, this period must be **extended to at least 42 days**.

3.2.2 Actions if HPAI is confirmed

Under Council Directive 2005/94, if HPAI is confirmed, all poultry on the holding must be culled and destroyed immediately. All egg and poultry products must also be destroyed. The meat from poultry from the holding, which were slaughtered within the period presumed to cover the incubation of the disease, shall also be traced and destroyed, as should hatching and table eggs laid in the incubation period.

Measures on the infected premises:

- All infected poultry and captive birds will be killed (limited derogations are possible for certain types of holding – these would be decided on a case-by-case basis)
- The carcasses of the birds and eggs will be destroyed
- An investigation will be carried out by the veterinary inspector (to identify the possible source of infection and all contact premises)
- Contact flocks will be restricted and investigated
- Eggs and meat that have originated from the flock during the risk period will be traced and destroyed
- The premises must be cleaned and disinfected
- The premises may not be re-stocked for 21 days after the cleaning and disinfection has been completed

A **Restricted Zone** will be established, that will be divided into a protection zone with a radius of 3 km around the infected premises, and a surveillance zone with a minimum radius of 10 km around the infected premises.

Within the protection zone the following will apply:

- Identification of all poultry and other bird holdings
- Periodic documented clinical inspections (& sampling if necessary) of all commercial poultry holdings
- On-farm biosecurity measures
- Active monitoring of wild birds
- Awareness campaigns for bird owners, hunters and bird watchers
- Ban on assembly of birds

- Ban on hunting wild birds
- Movements of poultry, other captive birds, other animals from poultry farms, litter/manure from poultry farms, bird carcasses, poultry meat and eggs are prohibited (except under certain conditions and under licence)

Within the surveillance zones the following measures will apply:

- Identification of all poultry and other bird holdings
- On-farm biosecurity measures
- Ban on assembly of birds
- Ban on hunting wild birds
- Movements of poultry, other animals from poultry farms, litter/manure from poultry farms, and eggs are prohibited (except under certain conditions and under licence)

3.2.2.1 Actions if HPAI (H5N1 only) is confirmed in POULTRY

Commission Decision 2006/415 lays down the measures to be implemented when HPAI H5N1 is confirmed in poultry.

Measures on the infected premises:

- All infected poultry and captive birds will be killed (limited derogations are possible for certain types of holding – these would be decided on a case-by-case basis)
- The carcasses of the birds and eggs will be destroyed
- An investigation will be carried out by the veterinary inspector (to identify the possible source of infection and all contact premises)
- Contact flocks will be restricted and investigated
- Eggs and meat that have originated from the flock during the risk period will be traced and destroyed
- The premises must be cleaned and disinfected
- The premises may not be re-stocked for 21 days after the cleaning and disinfection has been completed

A **Restricted Zone** will be established, that will be divided into two Areas:

Area A consists of:

- The Protection Zone with a radius of at least 3 km around the infected premises
- The Surveillance Zone which is outside the Protection Zone and has a radius of at least 10 km around the infected premises

Area B consists of:

- An additional buffer zone around Area A. The size of this will depend on the number and location of the outbreaks.

Measures in the Area A

- A census of all premises containing commercial poultry will be carried out
- Movements of poultry, wild game birds, other animals from poultry farms, litter/manure from poultry farms, wild feathered game meat, eggs, bird carcasses and other animal by-products derived from poultry/birds are prohibited (except under certain conditions and under licence)

- Bird gatherings are banned
- The release of game birds is banned
- Biosecurity measures must be implemented in the case of people and vehicles moving to and from premises containing poultry or captive birds

Measures in Area B

- Movements of poultry, wild game birds, other captive birds, wild feathered game meat, hatching eggs, bird carcasses and other animal by-products derived from poultry/birds are prohibited (except under certain conditions and under licence)
- Bird gatherings are banned

Period for which movement controls remain in place

- The Protection Zone must stay in place for at **least 21 days** after the preliminary cleaning and disinfection of the infected premises has been carried out, and then the Zone becomes part of the Surveillance Zone
- The Surveillance Zone must stay in place for **at least 30 days** after the preliminary cleaning and disinfection of the infected premises has been carried out.
- Area B will stay in place until a risk assessment has determined that it is safe to remove it.

3.2.2.2 Actions if HPAI (H5N1 only) is confirmed in WILD BIRDS

Commission Decision 2006/563 lays down the measures to be implemented when HPAI H5N1 is confirmed in wild birds.

A Wild Bird Restricted Zone will be established which will consist of two areas:

- A **Control Area** with a radius of at least 3 km around the location where the wild bird was found
- A **Monitoring Area** with a radius of 10 km around the location where the wild bird was found

The limits of the Areas will be decided in conjunction with ornithology experts who will assist the Department of Agriculture in assessing the area at risk.

Measures in the Control Area

- A census of all poultry will be carried out
- Commercial poultry and targeted poultry/captive bird flocks at particular risk will be examined by a veterinary inspector and samples may be taken for avian influenza testing
- Increased surveillance will be carried out at wild bird habitats
- Warning notices will be placed around the area where the infected wild bird carcasses were found
- Checks on biosecurity in poultry flocks will be carried out by Department of Agriculture staff
- Movements of poultry, wild game birds, other captive birds, poultry and wild feathered game meat, hatching eggs, bird carcasses and other animal by-products derived from poultry/birds are prohibited (except under certain conditions and under licence)
- Gatherings of birds are banned
- Hunting of wild birds and release of game birds are banned

Measures in the Monitoring Area

- A census of all poultry will be carried out
- Increased surveillance will be carried out at wild bird habitats
- Checks on biosecurity in poultry flocks will be carried out by Department of Agriculture staff
- Movements of poultry and other captive birds are prohibited (except under certain conditions and under licence)
- Gatherings of birds are banned
- Hunting of wild birds and release of game birds are banned

The **Control Area** must stay in place for at least **21 days** from the date of collection of the wild bird carcasses, and then the Zone becomes part of the Surveillance Zone

The **Monitoring Area** must stay in place for at least **30 days** from the date of collection of the wild bird carcasses

Note: If HPAI H5, H7 or H9 is suspected or confirmed in wild birds, they will not be culled, as this is likely to lead to dispersal of the disease.

4. Human health actions

Although AI viruses usually do not infect people, rare cases of human infection with these viruses have been reported. These have occurred most often after unprotected contact with infected birds or their droppings. The spread of AI from one ill person to another has been reported very rarely, and when it has been reported it has been limited, inefficient and not sustained. However, because of the [possibility that AI viruses could change](#) and gain the ability to spread easily between people, monitoring for human infection and person-to-person spread is extremely important for public health.

KEY PUBLIC HEALTH ACTIONS

1. Following notification by DAFM of a case of AI which is highly suspicious or confirmed, **notify** the Health Protection Surveillance Centre (HPSC), and Assistant National Director Health Protection. **The Chair of the local ACMT needs to be informed and briefed as required.**
2. Undertake [a risk assessment of the public health impact](#) of the animal incident in conjunction with the Regional Veterinary Office (or Local Disease Control Centre if one has been established).
3. Advise that PPE should be implemented (jointly with other responding agencies)

Note: The risk assessment will change over time and will need to be repeated at intervals during the incident.





4. Decide on a [‘Standard’ or ‘Strict’ approach](#) [\[Section 4.2 /Figure 2\]](#) In these early stages of an incident, prior to definitive epidemiological and laboratory information from DAFM being available it is appropriate to adopt an intensive Strict Approach.
5. Categorise [Contact Exposure \(Categories A-D\)](#) [\[Section 4.3\]](#)

Note: DAFM will supply contact details of all persons who are potential contacts to the Department of Public Health. A more comprehensive list of possible visitors to poultry farms may be found in [Appendix 14](#). Levels of exposure for these groups may differ depending on the nature of the activity or business undertaken.

6. Undertake [Health Surveillance of identified contacts as appropriate](#) [\[Section 4.4\]](#)
7. Provide Antiviral Prophylaxis where appropriate [\[Section 4.5\]](#) and Figure 3]
8. Identify any AI case/s. These individuals should be managed according to [Public Health/HPSC guidance as possible human cases of avian influenza](#). [Symptoms](#) can range from a mild to severe disease.
9. Refer to acute services as appropriate
10. Forward regular updates to Assistant National Director for Health Protection and to HPSC

Public Health Management of exposed persons during an AI incident is detailed in Section 4 and summarised in [Table 1](#).

Table 1: Summary of Public Health Management of Exposed Persons in response to Avian Influenza incident

EXPOSURE CATEGORY (Sect 4.3)	ANTIVIRAL CHEMOPROPHYLAXIS (Sect 4.5)		SURVEILLANCE (Sect 4.4)	RISK LEVEL
CATEGORY A: Occupational exposure to AI prior to identification of an incident, in those who were NOT WEARING APPROPRIATE PPE at all times during exposure. This could include: <ul style="list-style-type: none"> ➤ Farm workers, other exposed workers, owners of backyard flocks or other people resident at the premises who have had exposure to birds or infected materials ➤ Veterinary and technical staff 	Chemoprophylaxis is advised to be started up to 7 days after the last exposure. The minimum course of 10 days' duration for Oseltamivir 75mg once daily is recommended.		ACTIVE FOLLOW-UP is required for every day up to 10 days from the last date when exposure occurred without APPROPRIATE PPE. (Category A workers should follow PASSIVE FOLLOW-UP once the active period is completed. Passive follow-up involves provision to the individual of information on human AI symptoms and emergency contact instructions.)	HIGH RISK 
CATEGORY B: Occupational contact with an avian source during the response to an incident, whilst WEARING APPROPRIATE PPE . This could include anyone involved in: <ul style="list-style-type: none"> ➤ the culling, disposal and clean-up operations at a premises or rendering facilities or ➤ rangers/vets handling of wild birds. 	POULTRY/CULLING Scenarios Chemoprophylaxis (Oseltamivir 75mg, once daily) should be started prior to individuals having contact with birds e.g. in culling scenarios and should be given daily while in contact and for 10 days after last exposure . If exposure has already occurred, prophylaxis should be started within seven days of the last exposure and continued for 10 days. The maximum recommended duration of prophylaxis is 42 days , and advice should be sought from NVRL if it is likely to be required for longer than this.	WILD BIRDS A risk assessment on an individual incident basis is required to determine whether a breach in PPE has occurred and if chemoprophylaxis is required.	If the individual has been exposed to the incident whilst wearing COMPLETE PPE during all exposures, then they should undergo PASSIVE FOLLOW-UP until 10 days after the last exposure to the infected site. Any individual who has NOT WORN COMPLETE PPE during all exposures will require ACTIVE FOLLOW-UP according to CATEGORY A from the date of the last exposure without full PPE.	MEDIUM RISK depends on RISK ASSESSMENT 
CATEGORY C: Non-occupational exposures which may include members of the public (or others) inadvertently handling sick or dead birds, or their faecal matter that is CONFIRMED to be infected with AI . These individuals are unlikely to have been using appropriate PPE.	CHEMOPROPHYLAXIS is advised to be started up to 7 days after the last exposure. The minimum course of 10 days' duration for Oseltamivir 75mg once daily is recommended.*		To be considered for ACTIVE FOLLOW-UP for 10 days from the date of exposure	HIGH RISK 
CATEGORY D: Non-occupational exposures which may include members of the public or others inadvertently handling sick or dead birds, or their faecal matter - where AI status CANNOT be confirmed (examples of such situations include a single or large bird die-off.)	These individuals will generally be managed under the standard approach, unless information or risk assessment suggests a different approach.		These individuals will generally be managed under the standard approach, unless information or risk assessment suggests a different approach.	LOW RISK 

*For A(H7N9) a "treatment dose" of 75mg Oseltamivir, twice daily is recommended and should be continued for 5 or 10 days. If exposure was time-limited and not on-going, 5 days of medication from the last known exposure is recommended. If exposure is likely to be on-going (e.g., household setting), 10 days is recommended because of the potential for prolonged infectiousness in the avian influenza A(H7N9) patient. A treatment dose is recommended for prophylaxis, due to concerns over potential resistance to Oseltamivir. If any individuals are unable to take Oseltamivir, this should be discussed with the NVRL.

4.1 Management of persons exposed during an incident of Avian Influenza (AI)

A contact is a person who has been exposed (within 1 metre – three feet) to an avian source or potential avian source of avian influenza virus, **within the past seven days**.

An avian source of avian influenza virus is dead or alive domestic fowl or wild bird(s) or settings in which domestic fowl were confined or had been confined **within the past six weeks**, in which the diagnosis of avian influenza is suspected or confirmed

Symptoms of AI in humans

Low Pathogenic* AI (LPAI) Symptoms

May range from conjunctivitis to influenza-like illness (e.g. fever, cough, sore throat, muscle aches to lower respiratory disease (pneumonia) requiring hospitalisation

Highly Pathogenic* AI (HPAI) Symptoms

May be associated with a wide range of illness from conjunctivitis only, to influenza-like illness, to severe respiratory illness (e.g. shortness of breath, difficulty breathing, pneumonia, acute respiratory distress, viral pneumonia, respiratory failure) with multi-organ disease, sometimes accompanied by nausea, abdominal pain, diarrhoea, vomiting and sometimes neurologic changes (altered mental status, seizures).

DAFM will inform the designated Medical Officer of Health (MOH) in the HSE area of the suspicious incident. This will be in advance of knowing further details on the subtype of influenza involved.

4.1.1 Risk assessment factors

Until laboratory results are available, a risk assessment is necessary to decide on the appropriate course of action.

This risk assessment will be based on the available evidence, with advice from DAFM and from Public Health and Microbiology staff with specialist epidemiological and virological expertise in the field of influenza (e.g. from the NVRL) and in consultation with HPSC.

The risk assessment should include consideration of the following:

- The likelihood that the virus is in recent circulation on the island of Ireland
- The nature of the bird/animal/human interactions e.g. whether or not the live birds needed to be caught and restrained during a cull
- The physical environment e.g. the presence of large exhaust fans blowing air out of a barn

Note: Any work that stirs up litter or dust, e.g. culling or cleaning and disinfection of poultry sheds will increase the risk of infection by inhalation or ingestion.

4.1.2 Specific actions for those with potential occupational exposure

Arrangements should be made for occupational surveillance of workers involved in outbreak control activities for symptoms of AI. This should include the following:

1. Administration of antiviral prophylaxis
2. Explanation of type of surveillance required

The provision of Personal Protective Equipment (PPE) and training their staff in the use of PPE is the responsibility of the DAFM. (See worker protection guidance, [Appendix 5](#))

Note on seasonal influenza vaccine use:

Routine vaccination with seasonal influenza vaccine is still STRONGLY recommended for workers having regular contact with birds and poultry to minimise the possibility of co-infection with human and avian influenza viruses there by reducing the risk of viral reassortment.

Seasonal Influenza vaccination is NOT recommended as a routine action in the response to avian influenza incidents. This is related to the time required for an individual to be protected from such a vaccination, which is normally longer than an individual's exposure during the response to a single incident. It should be noted that a seasonal influenza vaccination is not expected to protect against a particular avian influenza strain identified in the incident itself, however it can help to reduce the chance of complications and hospitalisation from seasonal influenza.

4.1.3 Specific actions for HPSC

HPSC is responsible for the following actions:

1. To notify:
 - Director of Public Health/MOH in the affected area if HPSC is the first to be notified of an AI incident
 - Assistant National Director of Health Protection
 - Assistant National Director of Emergency Planning
 - Chief Medical Officer, Department of Health
 - National Virus Reference Laboratory
 - Public Health Agency, Health Protection division (depending on scale) in Northern Ireland
 - [National Pandemic Influenza Expert group (PIEG) or equivalent National committee should reconfiguration of PIEG occur]
2. To discuss with Assistant National Director, Health Protection regarding convening a National Outbreak Investigation Team
3. To review:
 - Communications materials and information available on website for public, health professionals, veterinary professionals, affected farmers etc. in collaboration with DAFM
 - Case definitions for human cases, surveillance questionnaires, and methods of data collation, analysis and presentation
 - Enhanced surveillance for potential cases nationally
 - Laboratory testing protocols in collaboration with NVRL
4. If human cases occur, to coordinate the epidemiological investigation nationally

5. To partake in HSE area outbreak control team
6. To assist in field investigation, if human cases occur, and upon request

4.1.4 Laboratory testing sequence and DAFM actions

In the initial stages of an incident, laboratory results may not be available, or may only provide partial information. As further results become available the public health response may change. The usual sequence of events is as follows:

1. DAFM is notified of an unidentified avian disease in birds, and Avian Influenza is suspected.

Note: *in the case of wild birds, AI is suspected when the birds are Matrix Gene positive. In the case of poultry it may be based on clinical signs or laboratory testing.*

2. Laboratory confirmation of Avian Influenza A
3. Confirmation of the subtype (H and N type)
4. Confirmation of pathogenicity. Pathogenicity results (e.g. HPAI or LPAI for birds) will generally be available between **2 and 12 days** from receipt of samples (depending on the length of time to grow virus on egg inoculations).
5. Central Veterinary Research Laboratory (CVRL) to share positive material sample with the National Virus Reference Laboratory (NVRL) to ensure diagnostic capacity to identify cases in humans.

4.1.5 Establishing an OCT

The role of the OCT is to agree and coordinate the activities of the agencies involved in the investigation and control of the outbreak. Its primary aim is to bring together the necessary expertise to establish the nature and extent of the outbreak and to determine effective measures to control the outbreak. The initial outbreak control team will include at a minimum the Public Health MoH representative, the Regional Senior Superintending Veterinary Inspector (RSSVI) or nominee, HPSC representative, HSE Occupational Health physician and administrative support. See section 4.1.6 and [Figure 1](#) for escalation of response algorithm.

Establishment of an Area Outbreak Control Team (OCT)

The establishment of an area OCT as soon as possible will normally be considered if the risk assessment of an incident is characterised by one or more of the following:

- Immediate and/or continuing health hazard significant to the population at risk
- One or more human cases identified
- The potential for an identifiable point source
- Involvement of large geographical area
- Vulnerable groups affected e.g. elderly, children, immunocompromised, pregnant women

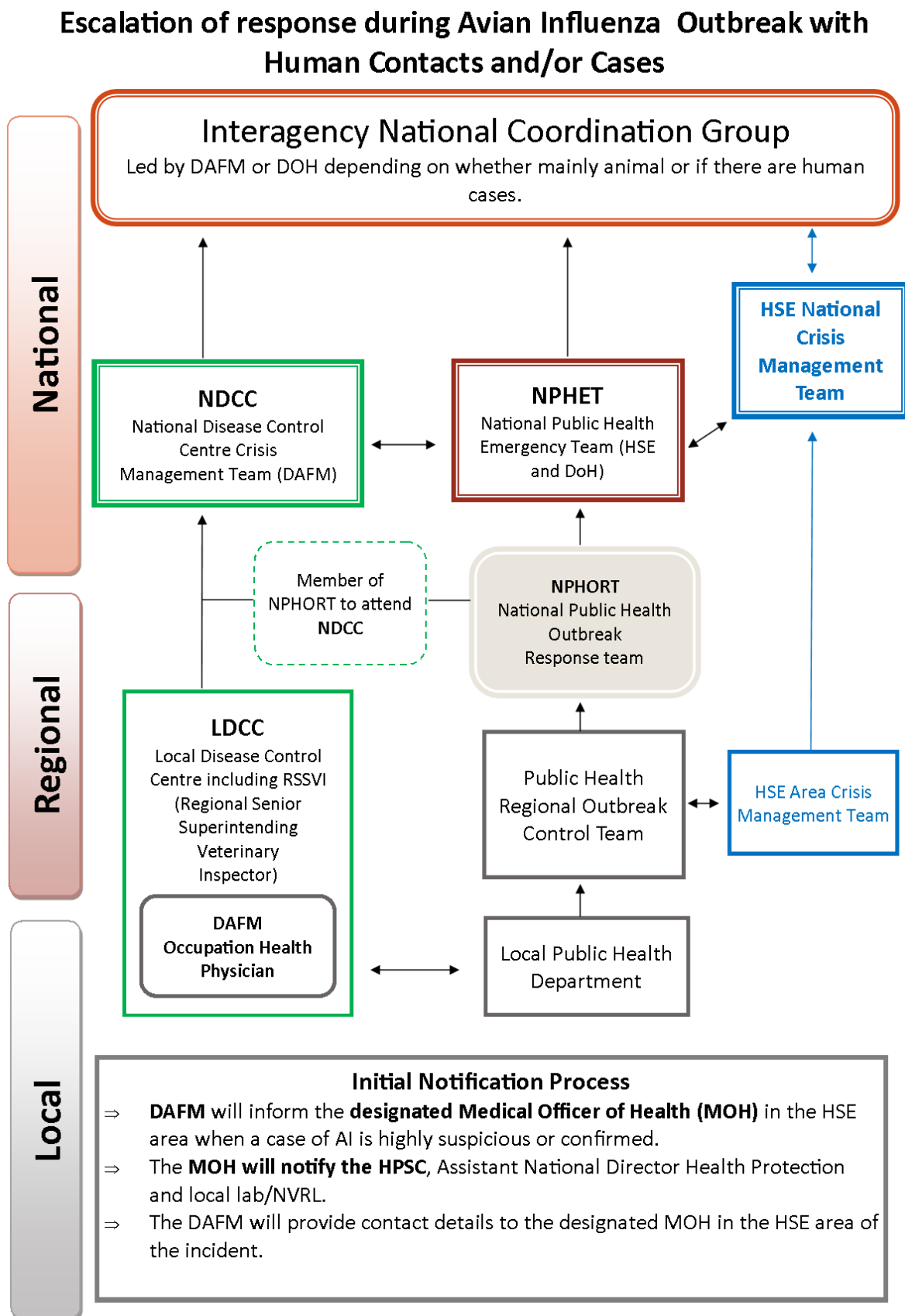
4.1.6 Escalation of response

Occasionally, outbreaks may be of such scale that there may be very significant implications for business continuity of local routine services, and additional resources will be necessary. If it is anticipated that the level of service may become compromised, the Chair of the Area Crisis Management Team must be informed at all times. His/Her management team will conduct a risk assessment vis á vis HSE services in the area and if necessary Major Emergency Plans and business continuity measures will be activated to ensure resilience.

Key summary points for escalation of response:

1. Always keep the Chair of the ACMT advised, briefed and informed. If necessary the ACMT will be activated in order to support the Public Health Response.
2. Consider need to put on standby alert or activate Regional Public Health Emergency Plan. Coordinate the requirement for Public Health surge capacity through the ACMT. If the scale of the outbreak is large additional resources, from outside can be sought through the ACMT in communication with the National Crisis Management Team.
3. Figure 1/(revised Appendix 1 Supplement 11 Part 1) outlines the notification procedure and committee structures that may be convened in association with Avian Influenza incidents and outbreaks (depending on severity and level of risk). Figure 1 also outlines the communication links between the animal and human sectors.

Figure 1: Escalation of response during AI outbreak animal or human (revised Appendix 1 from Supplement 11 Part 1)



4.2 Contact management: Strict and Standard approaches

The strict and standard approaches recognise that a different level of response may be required, depending on the risk assessment. The strict and standard approaches are not static, and the response may be upgraded or downgraded as further information becomes available or as the incident progresses. See [Figure 2: Strict versus Standard Approach Algorithm](#) for deciding on strict or standard approach.

4.2.1 Principles of the strict approach

The principles of the strict approach include:

- keeping the numbers of people exposed to an absolute minimum (balanced against practical needs to undertake necessary control measures)
- commencing prophylaxis with Oseltamivir for people already exposed (who have been in close contact with infected birds) as soon as possible
- advising people who are likely to be exposed as responders to commence prophylaxis in advance of commencement of duties
- advising on the appropriate need for Personal Protective Equipment (PPE) use
- **active follow-up** of persons exposed and/or their close or family contacts depending on expert epidemiological and virological advice

4.2.2 Circumstances where a strict approach should be used

The strict approach should be used when any of the following criteria are met:

1. When the haemagglutinin (H) subtype is known to be an H5, H7 or H9
2. Any incident when human deaths are already apparent, or are previously associated with the subtype
3. Any incident in which serious human illness is already apparent or strongly suspected, or is previously associated with the subtype
4. When person-to-person transmission is confirmed by laboratory tests
5. When widespread person-to-person transmission is suspected (but not necessarily confirmed)
6. Any incident, in which the expert virological or epidemiological advice suggests that the identified virus has pandemic potential

Identification of a H2 or H10 virus may also qualify for a strict approach as these have caused severe infection in humans. Expert virological and epidemiological advice should be sought on an incident-by-incident basis for these subtypes from the NVRL.

4.2.3 Principles of the standard approach

The principles of the standard approach include:

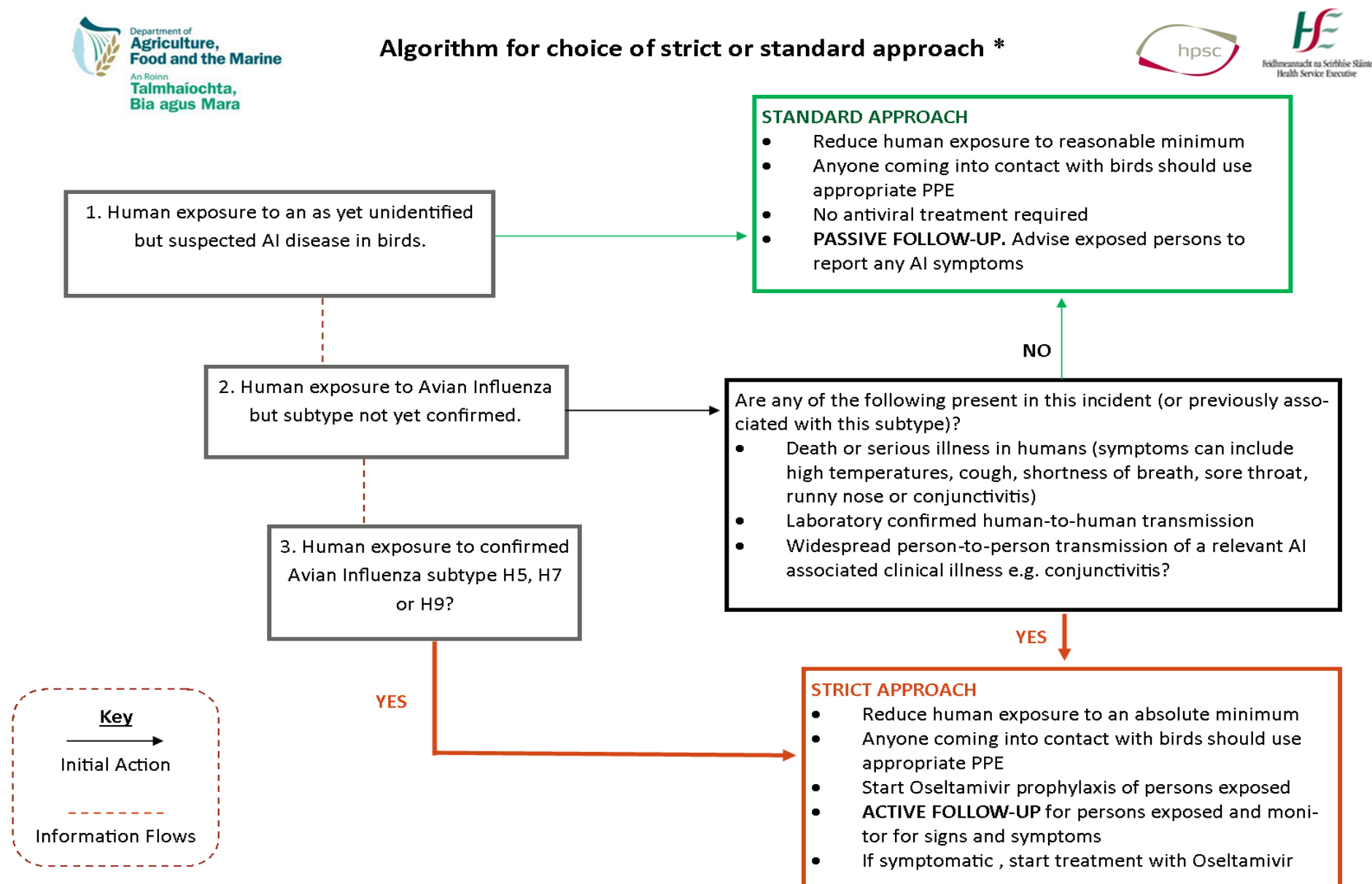
- Keeping the numbers of people exposed to the infected birds to a reasonable minimum
- Not starting prophylaxis with Oseltamivir (or if already commenced as part of a strict approach, discontinuing use) provided there have been:
 - no serious human illness or deaths
 - no sustained person-to-person transmission (as confirmed by laboratory tests) confirmed to be linked to that subtype, and

- the number of humans affected by a [common clinical syndrome](#) suspected or confirmed to be linked to that subtype is NOT greater than expected.
- The use of appropriate PPE worn correctly
- **Passive follow-up** of persons exposed (provision of information and advised to contact Public Health if feeling unwell. ([Symptoms](#) of AI can range from mild to severe.)
- The standard approach may be upgraded to a strict approach if any of the criteria in the strict approach occur.

4.2.4 Exposure to unidentified disease in birds

Members of the public who have handled birds with unidentified disease (or their faecal material) where there is no specific information to indicate avian influenza, will generally be managed under the standard approach, unless information or risk assessment from Public Health or Occupational Health suggest a different approach.

Figure 2: Algorithm to decide strict or standard approach to AI incident (suspicious or confirmed)



*Adapted from Public Health England (PHE) Guidance: Managing the human health implications of AI in poultry and wild birds; Jan 2017

4.3 Exposure categories during an avian influenza incident

Category A

Occupational exposure to AI prior to identification of an incident in those who were **NOT wearing appropriate PPE** at all times during exposure. This could include:

- Farm workers, other exposed workers, owners of backyard flocks or other people resident at the premises who have had exposure to birds or infected materials
- Veterinary and technical staff

Category B

Persons who have occupational contact with an avian source during the response to an incident **whilst wearing appropriate PPE**. This could include anyone involved in:

- the culling, disposal and clean-up operations at a premises or rendering facilities or
- rangers/vets handling of wild birds.

Category C

Non-occupational exposures: May include members of the public (or others) inadvertently handling sick or dead birds, or their faecal matter that is **confirmed to be infected with AI**. These individuals are unlikely to have been using appropriate PPE.

Category D

Members of the public or others outside of occupational settings, inadvertently handling sick or dead birds, or their faecal matter - **where AI status cannot be confirmed** (examples of such situations include a single or large bird die-off.) These individuals will generally be managed under the standard approach, unless information or risk assessment suggests a different approach.

[Return to summary table 1 for key management actions by exposure category.](#)

4.4 Health surveillance of exposed individuals

4.4.1 Strict approach

Category A:

- **Active follow-up** is required for **every day up to 10 days** from the last date when exposure occurred without complete PPE. This active follow-up consists of daily contact² between Public Health and the individual to check that the latter has not developed any symptoms compatible with human AI (including conjunctivitis). The individual should also receive standard information on potential symptoms and emergency contact instructions for Public Health (in case symptoms develop between daily follow-up).
- Category A workers should follow **passive follow-up** once the active period is completed. Passive follow-up involves provision to the individual of information on [human AI symptoms](#) and emergency contact instructions.

² Daily contact can be in the form of SMS messaging or other form of electronic communication

Note: At times when significant numbers of contacts are likely, prioritisation of those to have active follow-up needs to be employed for practical purposes and should be based on degree of exposure risk.

Individuals under active and passive follow-up should be given the contact details for the local Public Health department.

Symptoms of AI in humans

Low Pathogenic* AI (LPAI) Symptoms

May range from conjunctivitis to influenza-like illness (e.g. fever, cough, sore throat, muscle aches to lower respiratory disease (pneumonia) requiring hospitalisation

Highly Pathogenic* AI (HPAI) Symptoms

May be associated with a wide range of illness from conjunctivitis only, to influenza-like illness, to severe respiratory illness (e.g. shortness of breath, difficulty breathing, pneumonia, acute respiratory distress, viral pneumonia, respiratory failure) with multi-organ disease, sometimes accompanied by nausea, abdominal pain, diarrhoea, vomiting and sometimes neurologic changes (altered mental status, seizures).

*In relation to pathogenicity of the avian source

Category B:

- If the individual has been exposed to the incident while wearing complete PPE during all exposures, then they should **undergo passive follow-up until 10 days after the last exposure to the infected site**. Passive follow-up involves provision of information on human AI symptoms for the individuals to be aware of and emergency contact instructions if symptoms develop.
- Any individual who has not worn complete PPE during all exposures will require active follow-up according to Category A from the date of the last exposure without full PPE.
- In situations where an individual has unprotected exposure, followed by protected exposure with complete PPE, then they should have 10 days of active follow-up from the date of last exposure without complete PPE. The individual should then be given instructions for passive follow-up for a period up to 10 days after the last exposure with complete PPE.

Category C:

- To be considered for active follow-up for 10 days from the date of last exposure

Category D:

- Not usually applicable to the strict approach.

4.4.2 Standard approach

Categories A-C:

- All persons exposed to the infected site/birds should undergo **passive follow-up for 10 days** after the last exposure (as explained above).

Category D:

- Based on the risk assessment with Public Health or Occupational Health; possible approaches may include consideration of passive follow-up for a single bird without AI confirmation. Active follow-up may be considered for large bird die-off where AI has not been confirmed.

Transmission based precautions

Advise ALL contacts to:

- Avoid touching their faces, including their eyes and mucous membranes with their hands
- Wash hands frequently: this means washing with soap and running water for a minimum of 15-20 seconds or the use of an alcohol based hand sanitizer if the hands are not visibly soiled

[Return to summary Table 1 for key management actions by exposure category.](#)

4.5 Antiviral chemoprophylaxis

4.5.1 Incidents in poultry

The decision on use of chemoprophylaxis is dependent on whether a strict or standard approach is deemed appropriate, to be started up to **7 days after the last exposure**. The minimum course of **10 days' duration for Oseltamivir 75mg once daily is recommended**.

For A(H7N9)³ a “treatment dose” of 75mg Oseltamivir, **twice daily** is recommended and should be continued for 5 or 10 days. If exposure was time-limited and not on-going, 5 days of medication from the last known exposure is recommended.

If exposure is likely to be on-going (e.g., household setting), 10 days is recommended because of the potential for prolonged infectiousness in the avian influenza A(H7N9) patient. A treatment dose is

³ The decision for treatment dosage for H7N9 chemoprophylaxis takes the following factors into account:

- A(H7N9) possesses a mutation conferring resistance to M2 ion blockers, therefore neuraminidase inhibitors (such as oseltamivir and zanamivir) are the front-line treatment
- Oseltamivir resistance was reported in a few patients post-treatment during the first wave of cases of avian influenza A(H7N9) in China, due to the R2N2K mutation in neuraminidase
- Using a treatment dose may reduce the risk of developing antiviral resistance

recommended for prophylaxis, due to concerns over potential resistance to Oseltamivir. If any individuals are unable to take Oseltamivir, this should be discussed with the NVRL.

4.5.2 Strict approach (categories A- C)

In all AI incidents considered to require a strict approach antiviral chemoprophylaxis is advised.

This is likely to include all incidents where the subtype of avian influenza is H5, H7 or H9. However, chemoprophylaxis of responders to incidents should be based on the findings of the risk assessment. If in doubt, discuss with the NVRL and HPSC.

Note for Category A and B occupational exposures only

Chemoprophylaxis (Oseltamivir 75mg, once daily) should be started prior to individuals having contact with birds e.g. in culling scenarios and should be **given daily while in contact and for 10 days after last exposure**. If exposure has already occurred, prophylaxis should be started within seven days of the last exposure.

The maximum recommended duration of prophylaxis is **42 days**, and advice should be sought from NVRL if it is likely to be required for longer than this.

*The exception to these recommendations would be for individuals in **Category B (who wore full PPE)** who have responded to a **wild bird incident**, which requires a risk assessment on an individual incident basis to determine whether chemoprophylaxis is required.*

4.5.3 Standard approach (all categories)

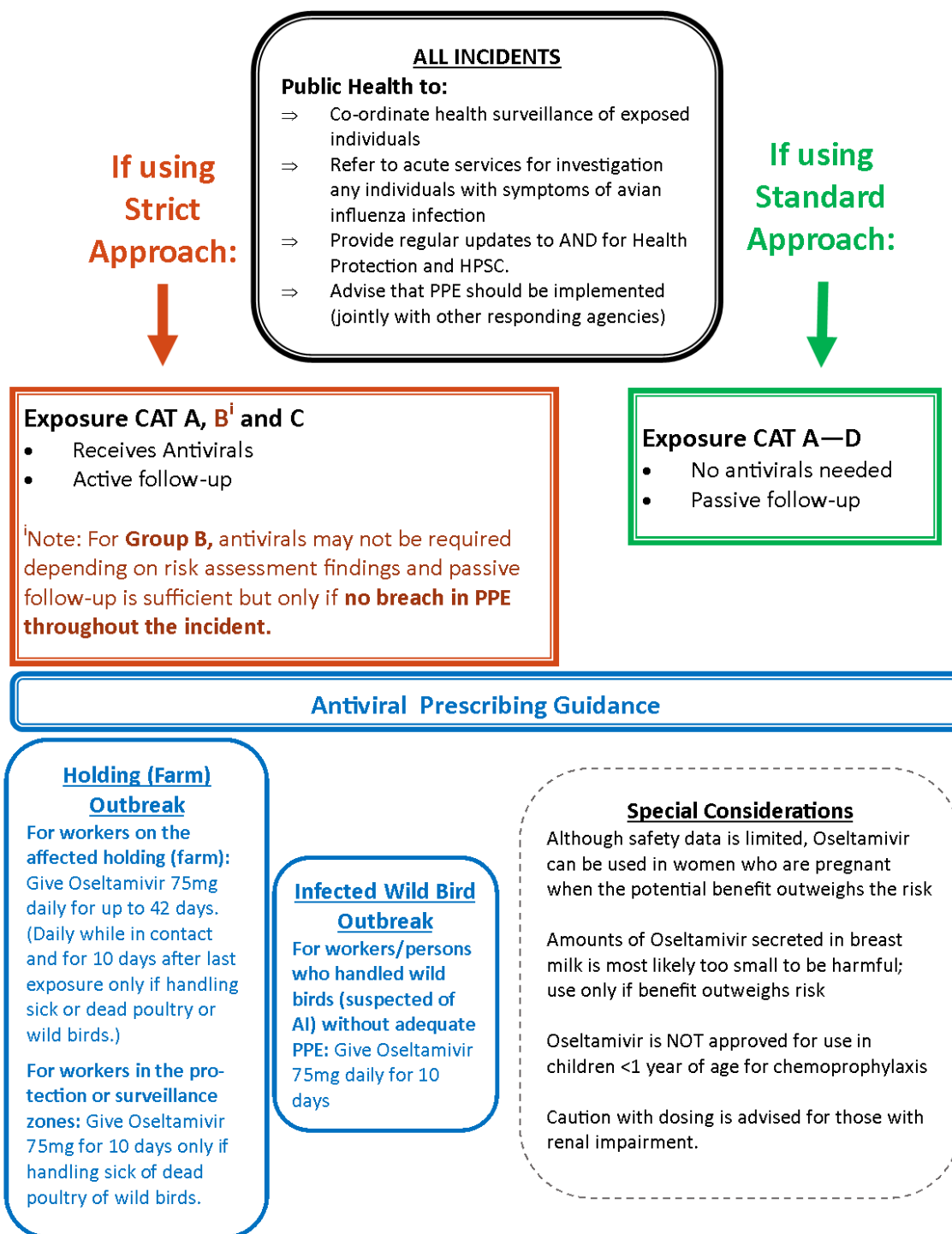
Antiviral chemoprophylaxis not routinely advised as long as all conditions for use of the Standard Approach are met.

See [algorithm for Public Health actions and antiviral prescribing](#)

[Return to summary table 1 for key management actions by exposure category.](#)

Figure 3: Antiviral prescribing summary

Summary of Public Health Actions and Antiviral Prescribing



[Return to summary table 1 for key management actions by exposure category.](#)

4.6 Management of symptomatic individuals

There should be local plans to respond swiftly to any reports of avian influenza-compatible symptoms in individuals under passive or active follow-up. These plans should include arrangements for prompt start of antiviral treatment, virological testing and infection prevention and control precautions for human avian influenza cases. They need to be assessed urgently. Local arrangements will need to be in place for assessment in a suitable location (hospital/clinic etc.) as per algorithm [Appendix 3 Supplement 11 Part 2](#). (Remember to phone in advance)

Individuals under active and passive follow-up should be given the contact details for the local Public Health department. The National Isolation Unit and the NVRL should be informed of any symptomatic individuals who are clinically assessed as suspected avian influenza cases and require virological testing.

4.7 Public Health management of contacts of human cases of AI

Please refer to the document “Irish Guidelines for the Public Health Management of Human Cases and of Influenza A/H5N1 and their contacts”. This is available in [Supplement 11, Part 2](#).

4.8 Communications

Agreement will be required in advance between Department of Agriculture, Food and the Marine, and the HSE as to who will deal with specific issues. Designated spokespersons/ experts should be identified. If this has not been done in advance, agree this as soon as possible.

- The Communications contact for the Department of Agriculture, Food and the Marine is: press@agriculture.gov.ie Telephone (01) 607 2190,

All HSE communications are coordinated through HSE national communications office.

Procedures will be required to ensure that timely information is communicated to HSE staff so that they can comply fully with what they are required to do in outbreak control measures and that they minimise risk to themselves and the public.

Public health personnel involved in management of contacts/workers involved in outbreak control should have access to real time information, which they can use in dealing with particular queries.

Table 2: Contact telephone numbers of key agencies

Department of Agriculture, Food and the Marine	Avian helpline: (076) 106 4403 1850 200 456 (outside office hours) Communications: (01) 607 2190
Departments of Public Health (HSE)	HSE East: (01) 6352000 HSE Midlands: (057) 9359891 HSE Northeast: (046) 9076412 HSE West: (091) 775200 HSE Midwest: (061) 483337 HSE Northwest: (071) 9852900 HSE South: (021) 4927601 HSE Southeast: (056) 7784124
Department of Health	(01) 635 40000
HPSC	(01) 876 5300
NVRL	(01) 716 4401
HSE Communications (including HPSC Communications)	(01) 635 2840
National Isolation Unit, Mater Hospital	(01) 830 1122

4.9 Update plan for this guidance document

This guidance is subject to change due to the evolving situation regarding avian influenza but will be routinely reviewed on a three yearly basis or post incident.